# The Arizona Tornado Outbreak of 2010

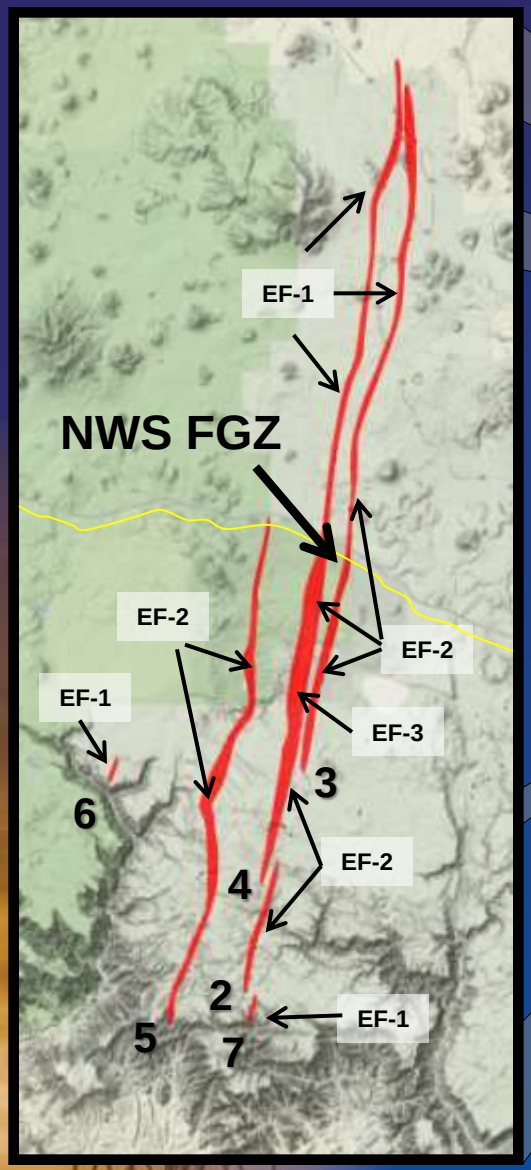
(Updated Oct, 2011)

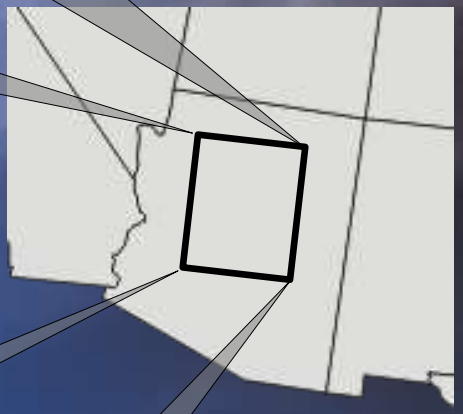
NWS Flagstaff, AZ

# The Updated Analysis

- **Since our original analysis of the Oct 6th 2010 Tornado Outbreak, additional data have been examined to better determine the magnitude of the event.**
  - ***Additional ground surveys were conducted.***
  - ***Radar data and storm rotational characteristics analyzed.***
  - ***New Google Earth imagery utilized.***
  - ***Additional research on damage ratings in forest areas.***
- **From these additional analyses, it was determined that at least *11 tornadoes* touched down on Oct 6th, 2010 (the original estimate was 8 tornadoes). Tornado #4 was also upgraded to EF-3 intensity.**

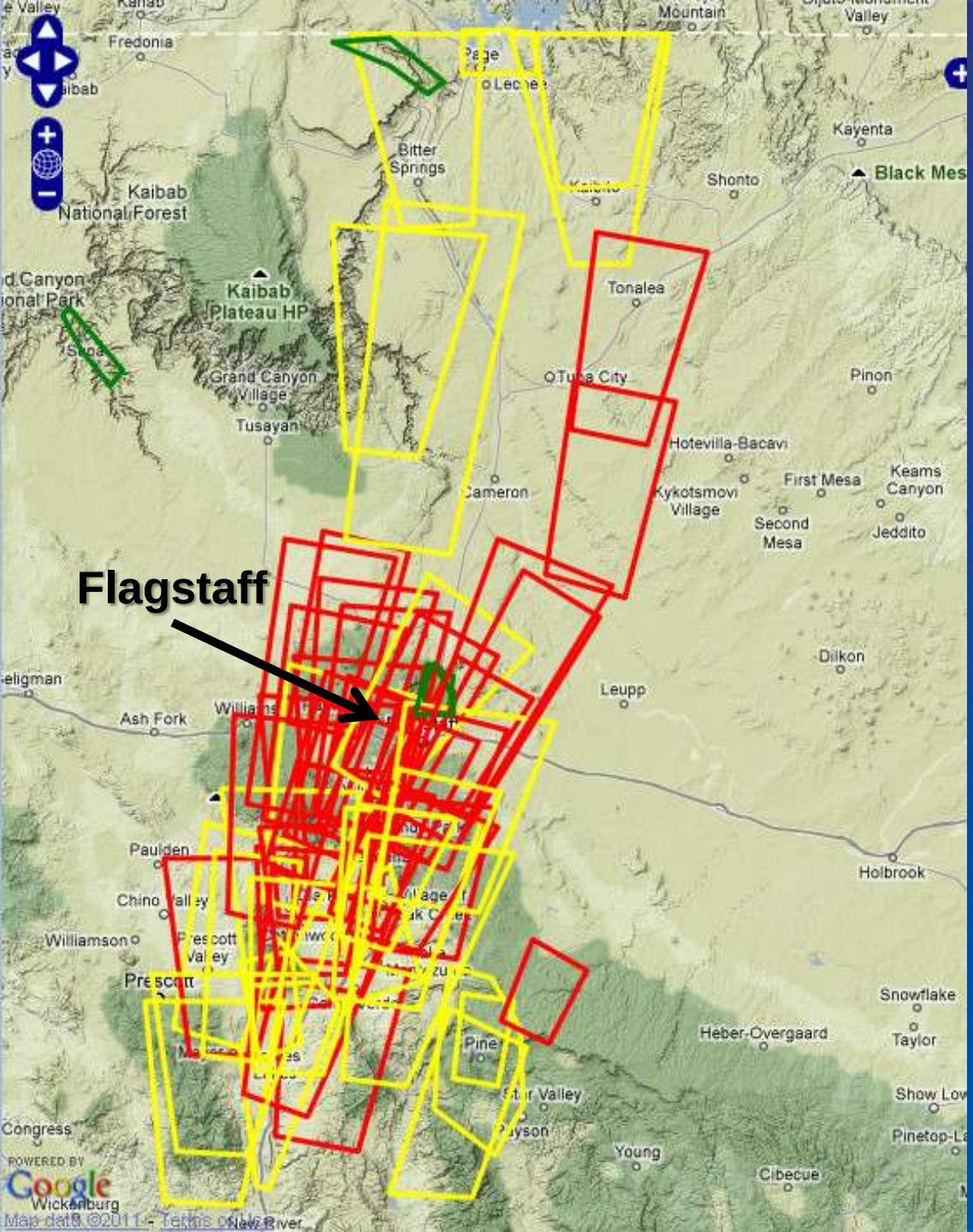
# Verified Tornadoes on Oct 6th, 2010





| | | |
|---|---|---|
| Tornado #1 | 2:05 AM | EF-2 |
| Tornado #2 | 4:53 AM | EF-2 |
| Tornado #3 | 5:18 AM | EF-2 |
| Tornado #4 | 5:54 AM | EF-3 |
| Tornado #5 | 6:50 AM | EF-2 |
| Tornado #6 | 8:29 AM | EF-1 |
| Tornado #7 | 9:10 AM | EF-1 |
| Tornado #8 | 10:30 AM | EF-0 |
| Tornado #9 | 11:15 AM | EF-3 |
| Tornado #10 | 12:10 PM | EF-0 |
| Tornado #11 | 12:20 PM | EF-0 |

(Tornadoes numbered near the start of each track on the maps)




# Warnings Issued on Oct 6, 2010

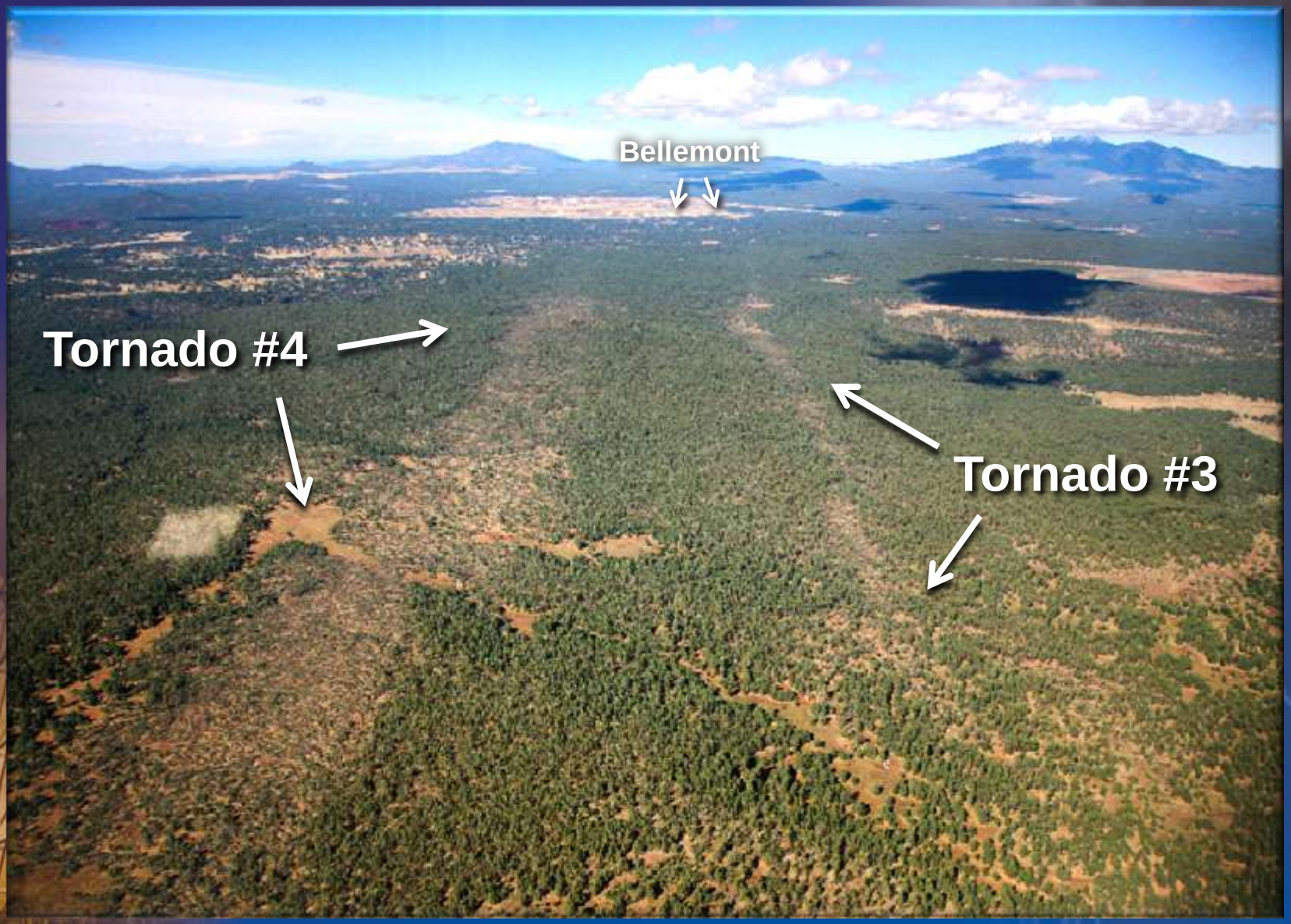
**28 Tornado Warnings**
**25 Thunderstorm Warnings**
**2 Flash Flood Warnings**

Each box represents the area indicated by a warning on Oct 6th. As you can see, there is a great concentration of warnings near Flagstaff. Potentially tornadic storms repeatedly moved over the same limited area of Northern Arizona throughout the morning.

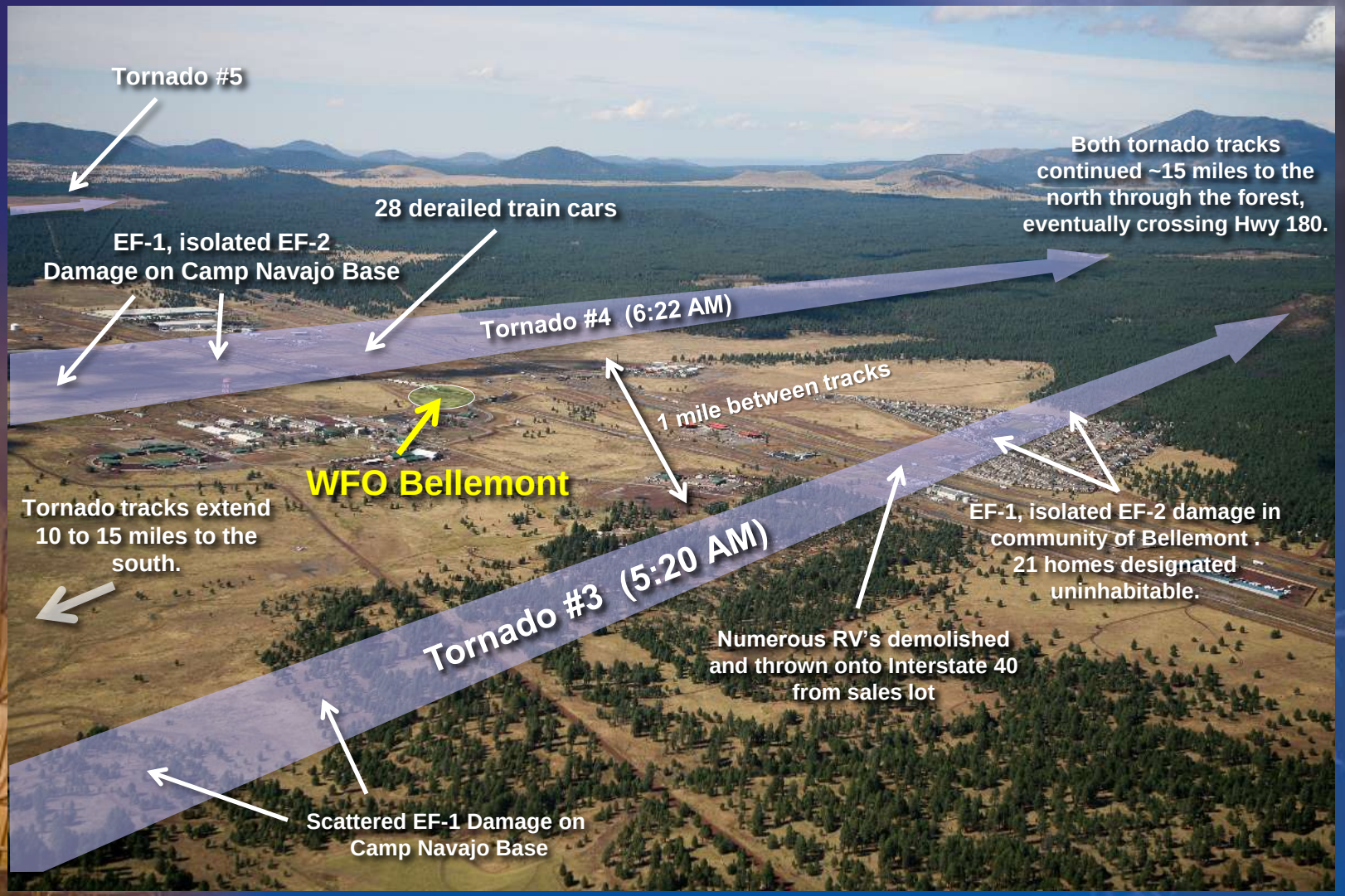
# EF-1, EF-2 Damage in Bellemont

# EF-2 Forest Damage North of Bellemont

# Areal View ~10 Miles S. Bellemont



# Tornado Tracks / Damage
## Near Bellemont, AZ



# Summary of the Oct 6th, 2010 Tornado Event

- **Greatest outbreak in Arizona**
  - *(previous record was 6 tornadoes in one day)*
  - *Duration, intensity, and number of tornadoes distinguished this event apart from any other AZ event, or any other event west of the Continental Divide.*
  - *-At least 11 tornadoes recorded on this date. The number may go even higher with further investigation of current tracks.*
- **It was the greatest recorded tornado outbreak west of the Continental Divide.**
- **Large hail (up to baseball-sized) was reported with the tornadic storms.**
- **Multiple tornadic storms repeatedly developed over the same location, keeping the same small area under a constant tornado threat for several hours.**
- **Occurred late at night – early morning with temperatures in the 40s!**

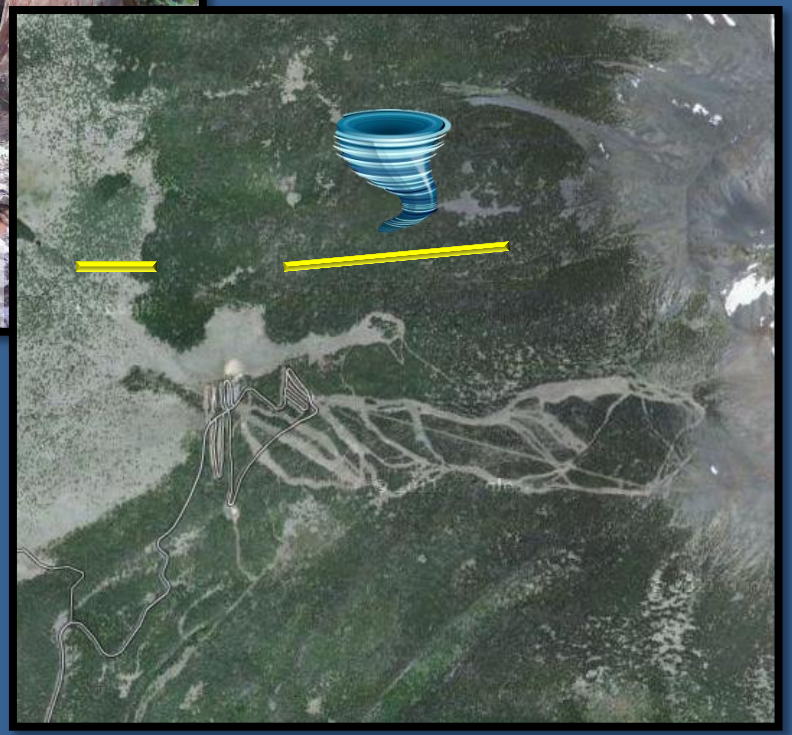
# TORNADO NEAR HUMPHREYS PEAK!

***Photograph provided by David Blanchard***

## *Quick Stats:*

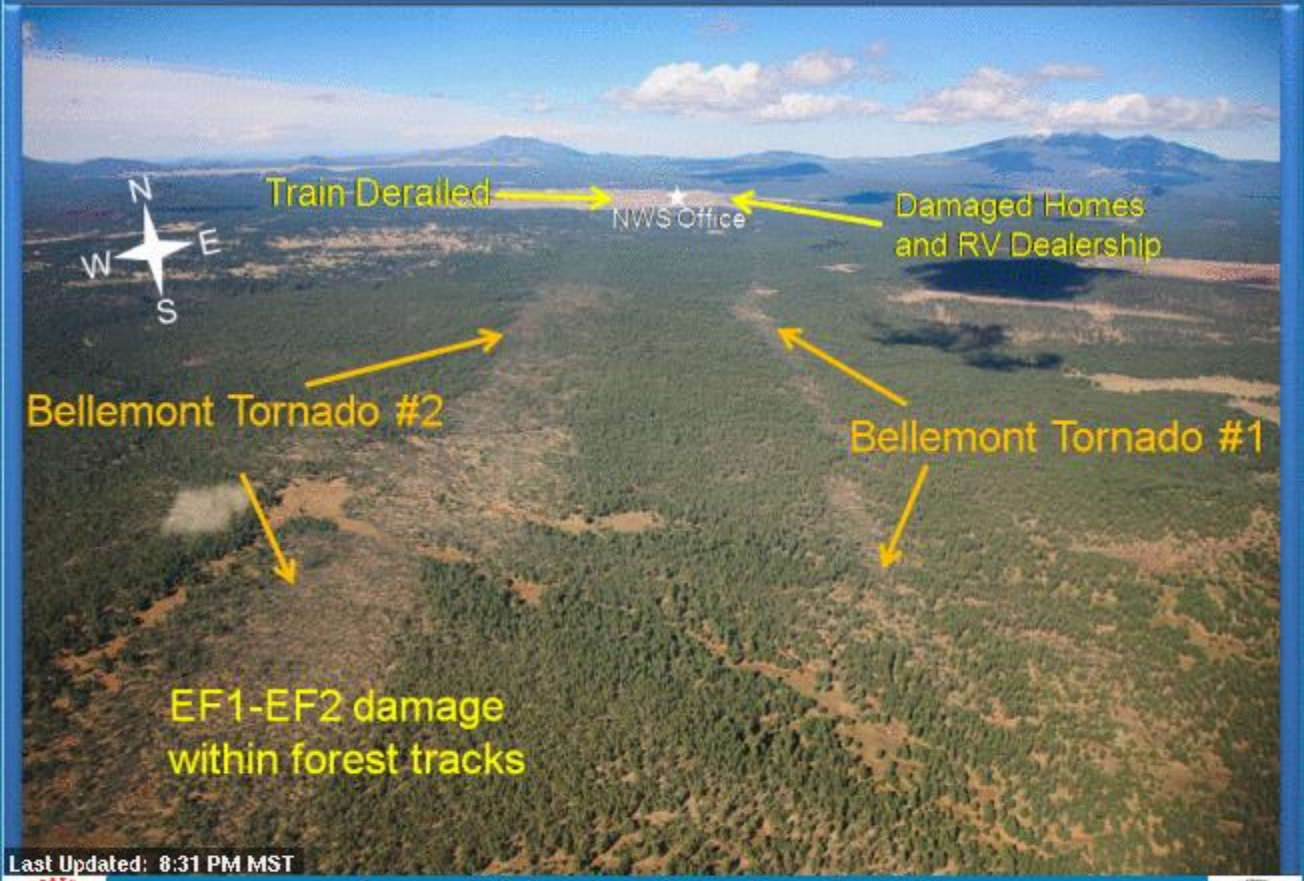
**Date and Time:** September 14th approximately 5:23 – 5:32 pm MST
**Location**: Just north of Arizona Snowbowl along Humphreys Peak Trail
**Elevation**: 9,200 – 10,500 feet
**Path Length**: 1.3 miles, discontinuous

**Intensity**: **EF-2**, Mostly EF0 – EF1 (65 – 110 mph), with isolated low end EF2 damage (approximately 120 mph)
**Damage**: Tree and forest damage



Think tornadoes don't occur at high altitudes? Think again! On September 14th, shortly before 5:30 pm a tornado touched down along Humphreys Peak Trail very near the Arizona Snowbowl. The elevation along the tornado track varied from 9,200 to 10,500 feet – making this one of the highest altitudes of a documented tornado in the U.S. High mountain tornadoes, while unusual, are not unheard of. In July 1987, a violent F4 tornado cut a 24 mile long path through parts of Teton-Yellowstone National Park, at an elevation of 8,500-10,000 feet. And in July 2004, a tornado was observed in Sequoia National Park at an elevation of near 12,000 feet!

# Tornado Tracks near Bellemont, AZ October 6, 2010



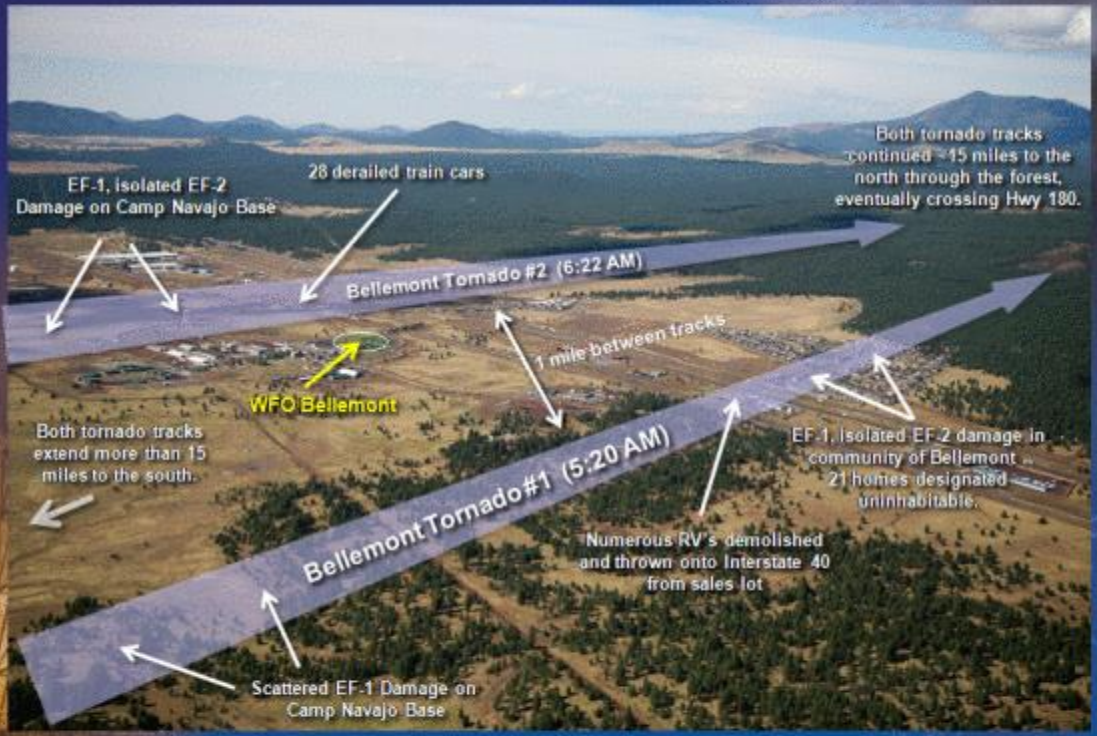

Last Updated: 8:31 PM MST

Issued Saturday, October 9, 2010

National Weather Service - Flagstaff, AZ

# 10-6-2010 Tornado Tracks / Damage

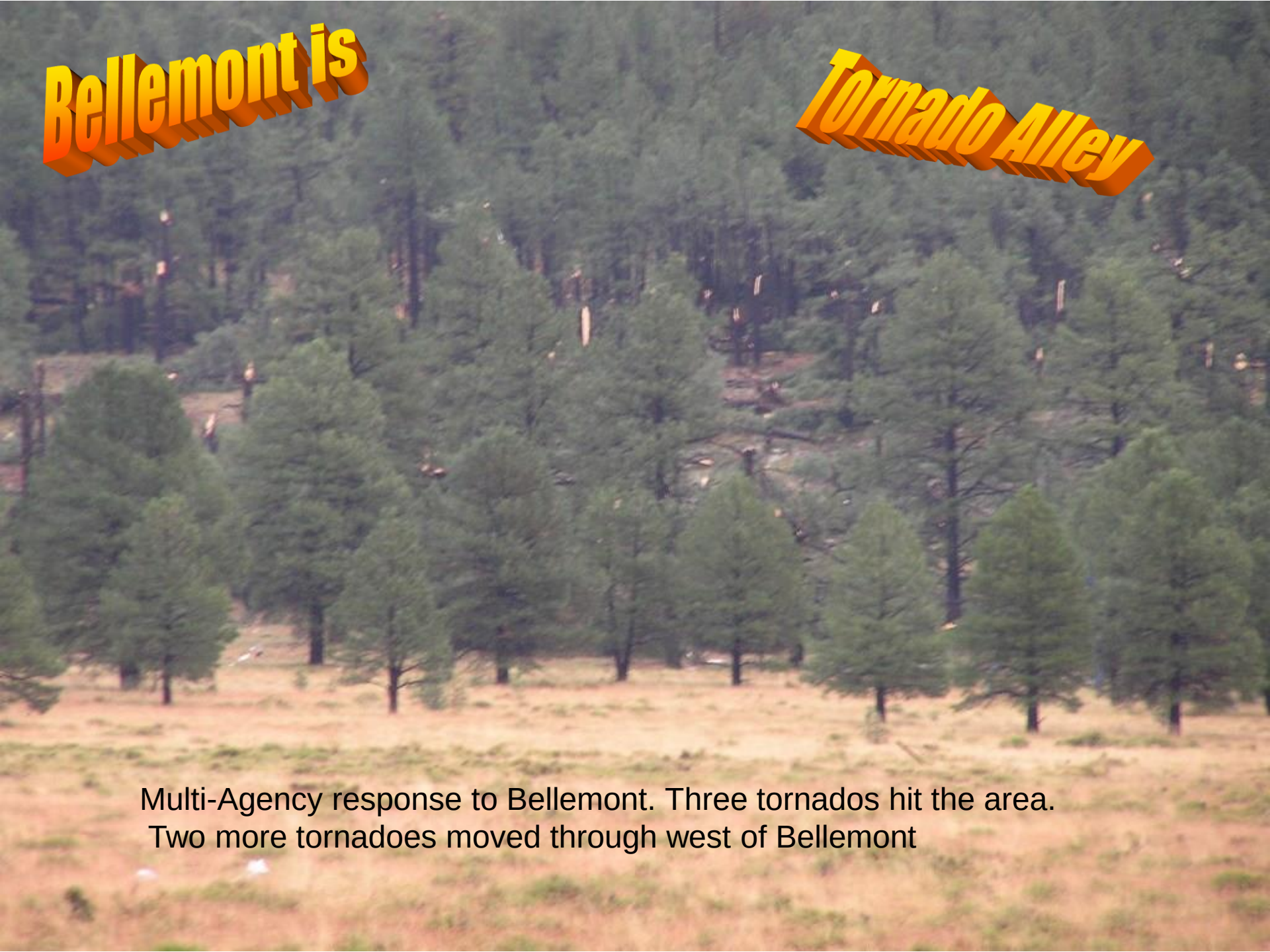
## Near Bellemont, AZ




Last Updated: 6:27 PM MST

Issued Saturday, October 9, 2010

National Weather Service - Flagstaff, AZ




Multi-Agency response to Bellemont. Three tornados hit the area.
Two more tornadoes moved through west of Bellemont

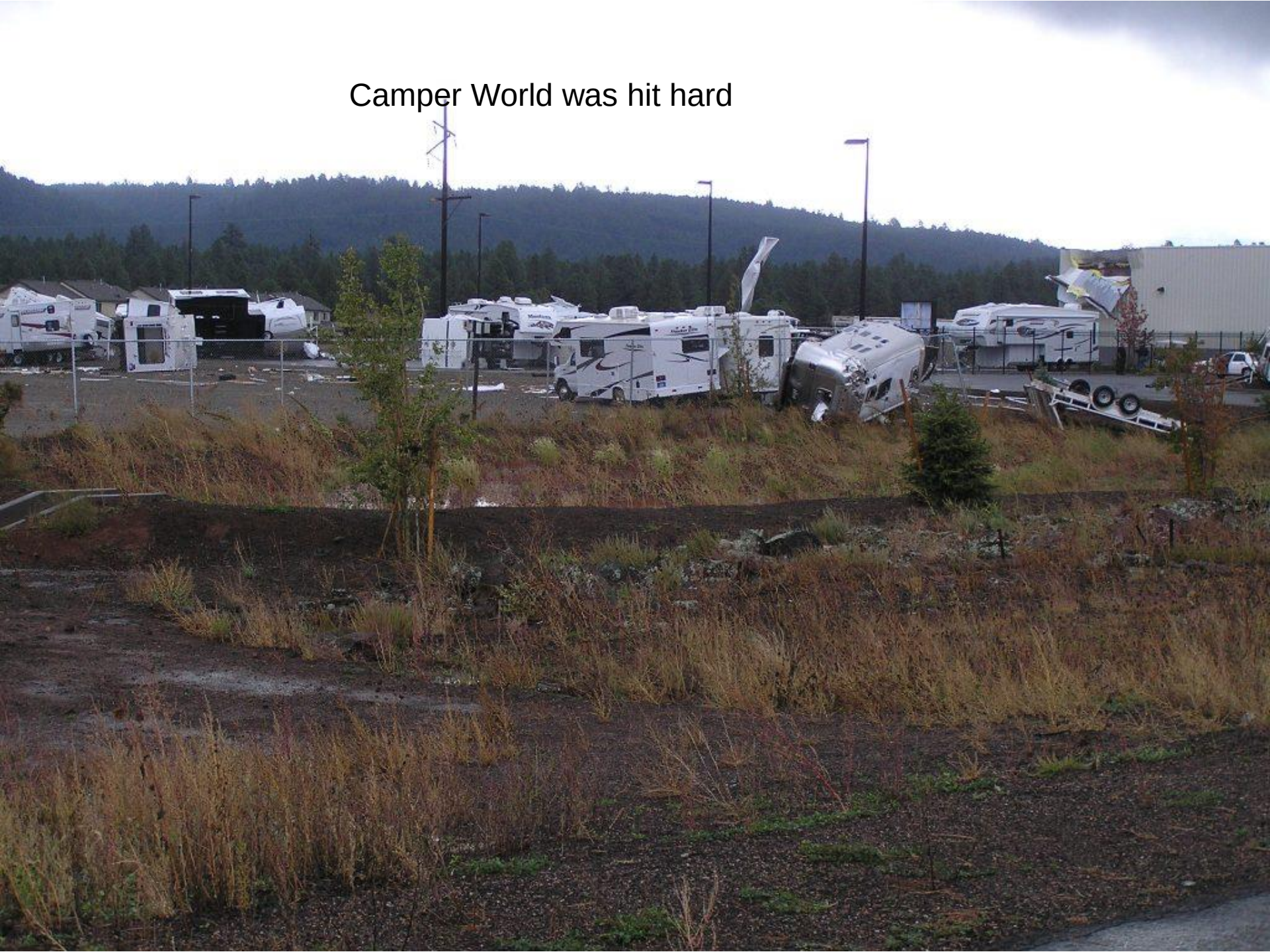
Semi flipped on I-40

20 car train deraillment

Huge counter clockwise cloud rotation

STAFF FIRE DEPARTMENT
BNSF
Ford

Camper World was hit hard

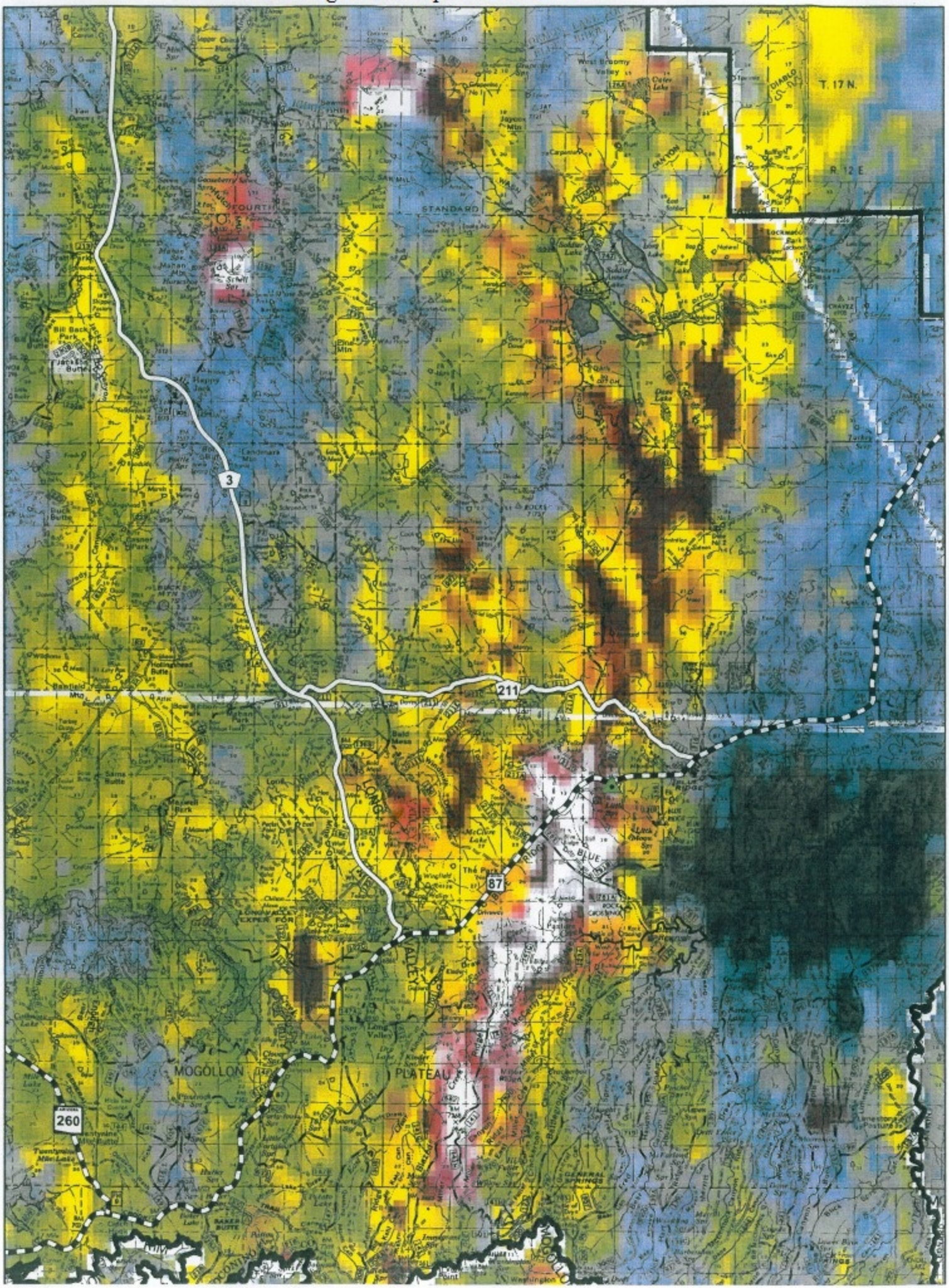


HIDEOUT

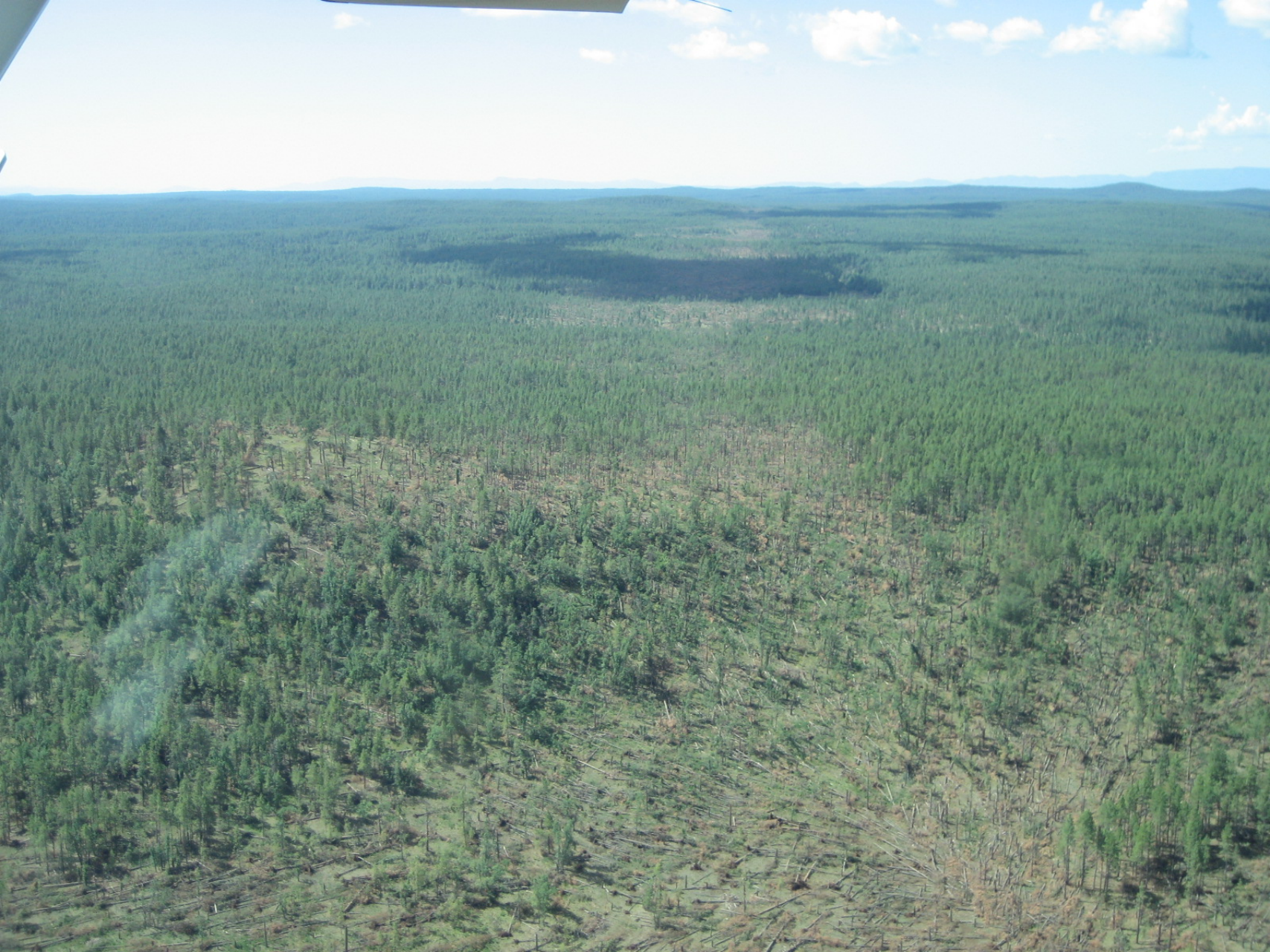
STARCRAFT

HIDEOUT

Blue Ridge tornado path Oct. 2010



Jeep



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